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(56) Documents Cited

WO 98/21665 A WO 97/22065 A WO 97/20274 A
US 5467102 A

(58) Field of Search

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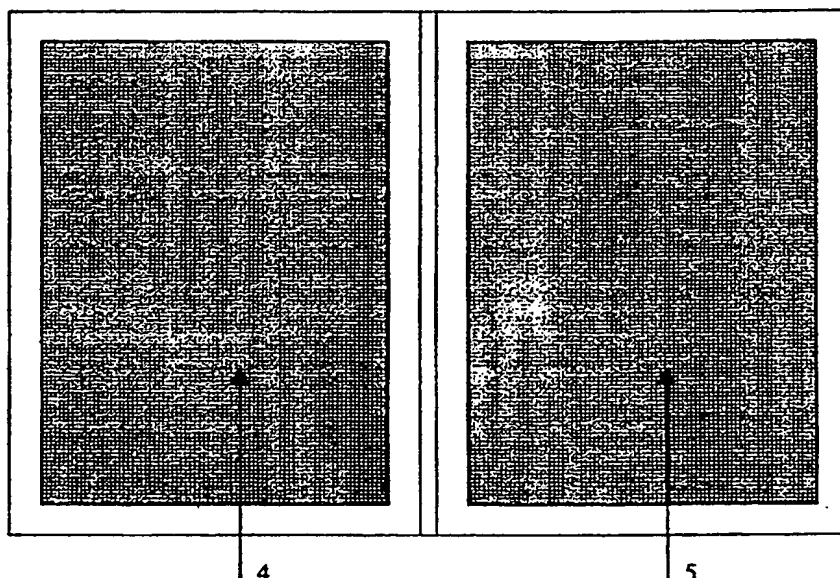
Online: WPI, EPODOC, PAJ, INSPEC, COMPUTER

(54) Abstract Title

Electronic book with two LCD screens

(57) A hand held electronic book comprises two touch sensitive opposing LCD screens (4,5) hinged to close face to face for protection, the screens enabling access to computing functions such as turning electronic pages, opening and closing electronic titles, moving electronic titles, switching on a back light, the book also comprising an onboard memory for storing titles and a means to access memory cards storing many electronic titles. The book may be powered by batteries stored in the hinge or by connection to mains electricity. The book may be produced in different sizes to support the display of standard size paperback books or to display A4 sized titles. The book may be connected to a PC via a cable to upload and download data, or it may communicate with infrared devices via an infrared communications port. The book may support word searching and present a touch sensitive keyboard, or a menu.

Fig 5



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Fig 1

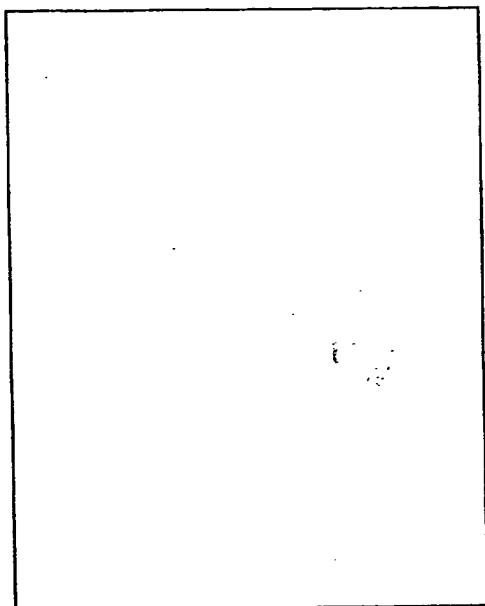


Fig 2

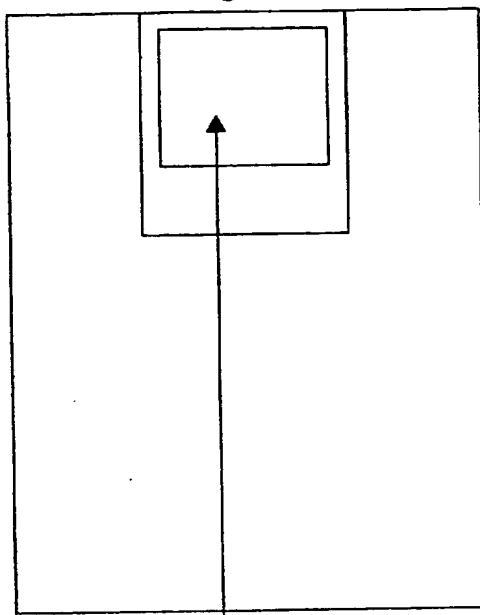


Fig 3

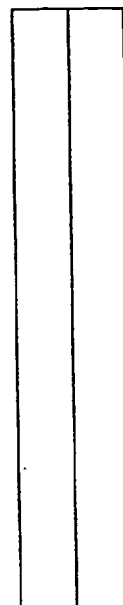


Fig 4

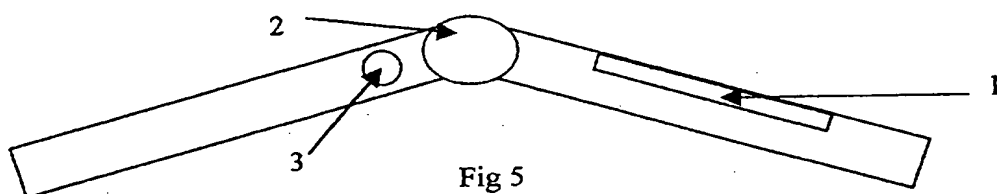
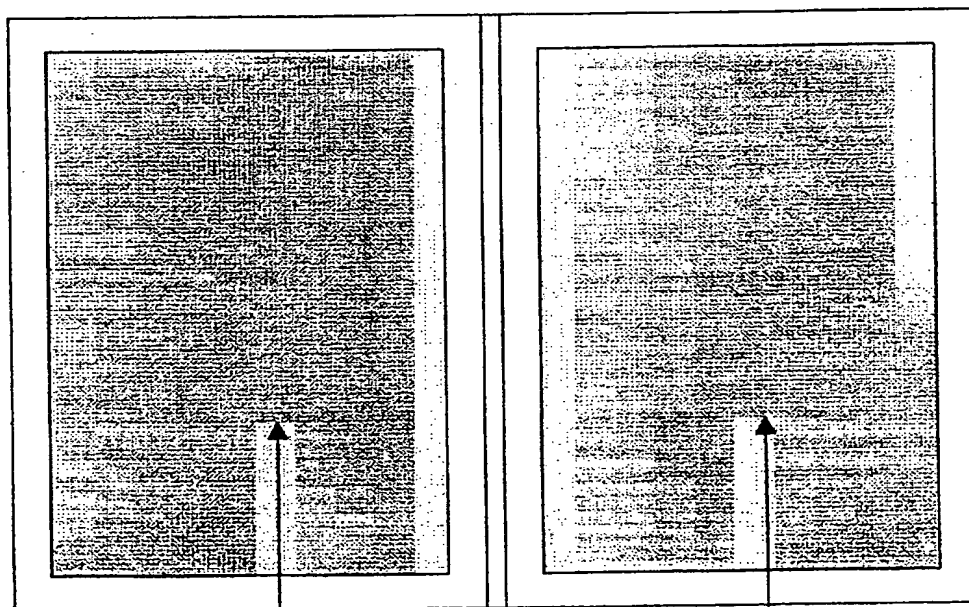


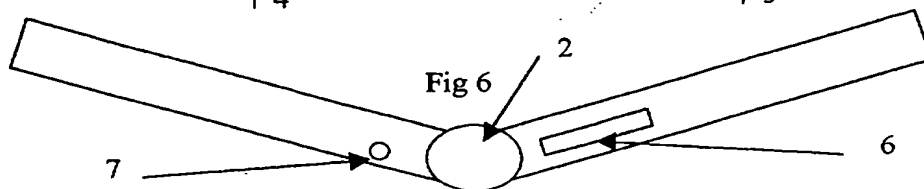
Fig 5



4

5

Fig 6



7

6

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ELECTRONIC BOOK

This invention relates to the reading of a book in electronic format using a hand held tool powered by either battery or mains power.

Books are currently mass-produced in paper format at great cost during manufacture and distribution using vital raw materials (paper, ink, etc), they take up large amounts of space in storage and strip the earth's environment of vital resources.

The object of this invention is to provide an electronic book which enables the reader to read books via a hand held electronic device, the electronic titles can be stored in the memory of the device or on inserted memory cards, the memory cards can be purchased from shops or over the internet. A publisher would then be able to publish books in electronic format on memory cards for use in the hand held device.

A hand held electronic book with 2 touch sensitive opposing LCD screens, hinged to close face to face for protection and storage. The LCD screens are touch sensitive to enable access to computing functions. You can touch the screen to turn displayed electronic book pages. It has an onboard memory for storing electronic titles and you can insert a memory card to access many other electronic titles. The memory cards are purchased containing a single electronic title or many electronic titles. Electronic titles can also be downloaded from a PC using a cable connection or infrared capable appliance, a zoom facility enables electronic title text to be enlarged for reading.

A specific embodiment of the invention will now be described by way of examples with reference to the accompanying drawing in which:-

FIGURE 1 is the Front View with the electronic book Closed.

FIGURE 2 is the Back View with the electronic book Closed. Reference 1 is the inserted Memory card that contains additional electronic titles.

FIGURE 3 is the Side View with the electronic book Closed.

FIGURE 4 is the Top View with the electronic book Open. Reference 1 is the inserted Memory card that contains additional electronic titles. Reference 2 is the hinge which also contains the batteries. Reference 3 is the Infrared communications port.

FIGURE 5 is the Front View with the electronic book Open. Reference 4 is the left hand touch sensitive LCD Screen which displays the left hand page of electronic book text. Reference 5 is the right hand touch sensitive LCD Screen which displays the right hand page of electronic book text and touch sensitive screen keyboard when activated.

FIGURE 6 is the bottom view of the electronic book Open. Reference 7 is the input plug point for mains electricity power. Reference 6 is the input plug point for the PC connection. Reference 2 is the hinged spin which links the two screens and contains the batteries.

For clarification the term 'electronic book' refers to the device pictured in the attached drawings, the term 'electronic title' refers to a published novel or manual to be displayed and read through this device.

The hand held electronic book is enclosed in a light weight strong plastic durable case with water resistant sealed joints. It is powered by either batteries inserted in the hinged 2 or mains electricity connection 7 via a cable.

The onboard memory in the device stores the page number being displayed so when you return and switch the device on the last page being viewed is opened instantly like a bookmark.

The touch sensitive screens 4, 5 support the following computer functions,

- 1) By touching the bottom left corner of the left hand screen 4 the page is turned 'backwards' through the electronic title, by touching the bottom right corner of the right hand screen 5 the page is turned 'forwards' through the electronic title. The display screens 4, 5 operating just like an open book showing the left hand page on the left hand display 4 and the right hand page on the right hand display 5.
- 2) By touching the top left hand corner of the left hand screen 4 a selection list is displayed in the top left hand corner of the screen 4. The options displayed are 'Open' to open a new electronic title from the onboard memory or memory card 1, 'Close' to close the current open electronic title, 'Search' to search for a specific word in the open electronic title, 'Light' to illuminate the screens 4, 5, 'Move' to move electronic titles to/from the onboard memory and memory card 1, 'Infrared' to send or receive electronic titles from other Infrared appliances, 'Zoom' to enlarge the text being displayed on both screens 4,5.
 - i) When the 'Open' function is selected (touched) a list of all the electronic titles held in the onboard memory and memory card 1 are displayed in the left hand screen 4, touch the name of the electronic title you wish to open to select and open the electronic title.
 - ii) When the 'Close' function is selected (touched) the current open electronic title is closed, storing the current page for the electronic title in the onboard memory.
 - iii) When the 'Search' function is selected (touched) the left hand screen 4 displays a text entry window to type in the word to search for and an 'ok' touch button, the right hand screen 5 displays a touch sensitive screen keyboard to type the word to search for. On pressing the 'ok' touch button on the left hand screen 4 the word is searched for and when the first occurrence of that word is found in the electronic title the corresponding page is displayed on the screens 4, 5.
 - iv) When the 'Light' function is selected (touched) both the screens 4, 5 are illuminated by a back light for reading in darkened conditions, re-selecting this option then turns the back light off.
 - v) When the 'Move' function is selected (touched) a list of the electronic titles in the onboard memory and inserted memory card 1 are displayed, these can then be moved from one area to the other respectively. This enables the memory card to be passed to another user of an electronic book.
 - vi) When the 'Infrared' function is selected (touched) you are presented with two options on the left hand screen 4. Option One, to 'Send' an electronic title to another device by selecting the electronic title from the list displayed on the left hand screen 4 and pressing the 'Send' button displayed on left hand screen 4. Option Two, to 'Receive' an electronic title sent to your device press the 'Receive' button displayed on the left hand screen 4. Received electronic titles are stored in the onboard memory of the electronic book.
 - vii) When the 'Zoom' function is selected (touched) the text is enlarged on both screens 4, 5 from ten point size font to twelve point size font. If pressed again the font will change from twelve point size font to fourteen point size font, and if

pressed a third time the font is changed from fourteen point size font back to ten point size font.

The device can be connected to a PC via a cable 6 for transferring electronic titles and manuals.

The device can communicate via infrared 3 with other similar devices to send electronic titles to and from other devices, such as handing out an electronic title or document in a meeting forum or passing to a friend's device.

The electronic book comes in two models 'A' and 'B'. Model 'A' when closed is approximately 20cm tall by 13cm wide and 2cm thick (fig 1), when open it is approximately 20cm tall by 26cm wide and 1cm thick (fig 5). Model 'B' when closed is approximately 33cm tall by 23cm wide and 3cm thick (fig 1), when open it is approximately 33cm by 46cm 1.5cm thick (fig 5).

Model 'B' will support the display size of A4 which would most likely be used for Industry applications such as reading manuals (computer manuals, training guides, etc) and the electronic format of standard size lever arch file type documentation.

The opposing LCD screens 4, 5 being hinged 2 to open and close, protecting the LCD touch sensitive screens from damage when closed. The back of the right hand screen 5 accepts a memory card 1 which stores many electronic titles or literatures.

When the electronic book is closed Fig 3 the device turns itself off, when opened Fig 5 the device turns itself on displaying the last electronic title opened, if available, at the memorised page.

If the device is left in its open state fig 5 and is running from battery power the electronic book will turn itself off after 30 minutes. To switch the device back on from the open state fig 5 either screen 4, 5 can be touched to reactivate the device to display the electronic title which was open at the time the electronic book automatically switched off.

The memory cards can be interchanged between both electronic book models 'A' and 'B', enabling stored electronic titles to be given to other electronic book users.

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CLAIMS

1. A hand held electronic book with two touch sensitive opposing LCD screens, hinged to close face to face for protection, the LCD screens are touch sensitive to enable access to computing functions such as turning electronic pages, opening electronic titles, closing electronic titles, moving electronic titles, switching on the back light. It has an onboard memory for storing electronic titles and can access inserted memory cards storing many electronic titles.
2. An electronic book as claimed in claim 1 which is able to display text for reading in the same format as that of a paper back book or manual.
3. An electronic book as claimed in claim 1 which has two touch sensitive LCD screens that activate computing functions built into the device.
4. An electronic book as claimed in claim 1 which has two touch sensitive screens which when activated will move forward two visual pages in the electronic title, the same process as turning the pages of a paperback book.
5. An electronic book as claimed in claim 1 which has two touch sensitive screens which when activated will move backward two visual pages in the electronic title, the same process as turning the pages of a paperback book.
6. An electronic book as claimed in claim 1 which is powered by batteries stored in the hinge of the electronic book or from a mains electrical point plug connected.
7. An electronic book as claimed in claim 1 which supports onboard storage of electronic text data such as a number of documents or manuals.
8. An electronic book as claimed in claim 1 which is produced in two distinct models 'A' and 'B' to support the display of standard size paperback books (model 'A') and A4 (model 'B') standard size documentation presentation formats.
9. An electronic book as claimed in claim 1 which can connect to a PC via a cable to download or upload data such as electronic titles.
10. An electronic book as claimed in claim 1 which via the touch sensitive LCD Screens can support word searching and present a touch sensitive screen keyboard.
11. An electronic book as claimed in claim 1 which communicates with other Infrared devices via the Infrared communications port.
12. An electronic book as claimed in claim 1 which has computer menu functions accessible by touching the touch sensitive screens.



The
Patent
Office




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Claims searched: 1-12

Examiner: Ben Micklewright
Date of search: 15 December 1999

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.Q): G4A (ADT)

Int Cl (Ed.6): G06F (15/02)

Other: WPI, EPODOC, PAJ, INSPEC, COMPUTER

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	WO 98/21665 A1 (LANDETTA) See e.g. the abstract and the figures	1 at least
X	WO 97/22065 A1 (MOTOROLA) See whole document, e.g. pages 7-13, page 24 lines 21-27	1-9,11,12
X	WO 97/20274 A1 (EVERYBOOK) See whole document, e.g. page 4 line 23 and pages 8-19	1-12
X	US 5467102 (TOSHIBA) See whole document, e.g. columns 3-6, column 9, column 10 lines 27-46, column 12 lines 10-13 and the figures	1-9,11,12

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

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